

SEQUENCE LISTING

<110> The United States of America as Represented by the Secretary of the
Department of Health and Human Services, Centers for Disease Control and
Prevention

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Steiner, Bret
Berta, Rodes

<120> COMPOSITIONS AND METHODS FOR DETECTING TREPONEMA PALLIDUM

<130> 6395-61666

<150> PCT/US00/16425

<151> 2000-06-14

<150> US 60/138,981

<151> 1999-06-14

<160> 26

<170> PatentIn version 3.1

<210> 1

<211> 2945

<212> DNA

<213> Treponema pallidum

<220>

<221> CDS

<222> (919)..(2217)

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<221> misc_feature

<223> Subspecies: pallidum (Nichols strain)

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act gct gtt gaa att	agc aac tta	gaa aag aat	gcc aag	gct cag	gca		999
Thr Ala Val Glu Ile	Ser Asn Leu	Glu Lys Asn	Ala Lys	Ala Gln	Ala		
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gtg gtt att ggg	cac gca	ggg atc	ccc ggt	ctt cta	gtt agc	ctt gca	1047
Val Val Ile	Gly His Ala	Gly Ile	Pro Gly	Leu Leu	Val Ser	Leu Ala	
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ccc gct gct gca	gca cag	ctt ggg	att ggc	gtat	tac caa	gct gtg cgt	1095
Pro Ala Ala Ala	Gln Leu	Gly Ile	Gly Val	Tyr Gln	Ala Val	Arg	
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gta cgc gta cgt	acc ttg	ggt acc	gtg cgc	ggt ggg	tct caa	aca aca agt	1143
Val Arg Val Arg	Thr Leu	Gly Thr	Val Arg	Gly Gly	Ser Gln	Thr Ser	
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cag gac gga	ctg tcc	ctt gca	tct ttg	ccg tcc	cgt gtg	cct gcg cgc	1191
Gln Asp Gly	Leu Ser	Leu Ala	Ser Leu	Pro Ser	Arg Val	Pro Ala Arg	
80	85	90					
ccc gcg cag	cgt gat	cct ctg	tca tcc	ccg ccg	gca ggt	cac act gta	1239
Pro Ala Gln	Arg Asp	Pro Leu	Ser Ser	Pro Pro	Ala Gly	His Thr Val	
95	100	105					
ccg gaa tat	cgc gat	acg gtt	att ttc	gat gac	ccg cgt	ttg gtt tcc	1287
Pro Glu	Tyr Arg	Asp Thr	Val Ile	Phe Asp	Asp Pro	Arg Leu Val Ser	
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cct ttg tct	cgt gag	gtg gag	gac qcg	ccg aag	gta gtg	gag ccg gcc	1335
Pro Leu Ser	Arg Glu	Val Val	Glu Asp	Ala Pro	Lys Val	Val Glu Pro Ala	
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tct gag cgt	gag gga	ggg gag	cgt gag	gtg gag	gac gcg	ccg aag gta	1383
Ser Glu Arg	Glu Gly	Gly Arg	Glu Val	Glu Asp	Ala Pro	Lys Val	
140	145	150	155				
gtg gag ccg	tct gag	ggg gag	cgt gag	gtg gag	gac gac	ccg aag gac	1431
Val Glu Pro	Ala Ser	Glu Arg	Glu Gly	Gly Glu	Arg Glu	Val Val Glu Asp	
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Val Pro Lys	Val Val	Glu Pro	Ala Ser	Glu Arg	Glu Gly	Gly Glu Arg	
175	180	185					
gag gtg gag	gac gcg	ccg aag	gta gtg	gag ccc	tct gag	cgt gag	1527
Glu Val	Glu Asp	Ala Pro	Lys Val	Val Glu	Pro Ala Ser	Glu Arg Glu	
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tct gag cgt gag gga ggg gag cgt gag gtg gag aac gtg ccg aag gta Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asn Val Pro Lys Val 220 225 230 235	1623
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp 240 245 250	1671
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gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu 350 355 360	2007
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gtg gag ccg gcc tct ggg cat gaa gga ggg gag cgt gag gac gtc gct tct Val Glu Pro Ala Ser Gly His Glu Gly Glu Arg Glu Val Ala Ser 400 405 410	2151
cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca gct ccc aat Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn 415 420 425	2199
cag ttt cgg aaa ccc tga gggggaaactc ccctttacgc tccctgacct Gln Phe Arg Lys Pro 430	2247
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tcatgacgt	atccagggtgc	agagcattgt	ccaccgttac	ggggtagaaat	accccatcgc	2427
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tccacgtacc	gcgatacgtt	agaggagaag	gtgcccactt	cttctcaagg	gcaagctcta	2907
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<213> Treponema pallidum

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<223> Subspecies: pallidum (Nichols strain)

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			20					25					30		

Ala	Gly	Ile	Pro	Gly	Leu	Leu	Val	Ser	Leu	Ala	Pro	Ala	Ala	Ala	Ala
			35					40				45			

Gln	Leu	Gly	Ile	Gly	Val	Tyr	Gln	Ala	Val	Arg	Val	Arg	Val	Arg	Thr
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Leu	Gly	Thr	Val	Arg	Gly	Gly	Ser	Gln	Thr	Ser	Gln	Asp	Gly	Leu	Ser
65					70				75				80		

Leu	Ala	Ser	Leu	Pro	Ser	Arg	Val	Pro	Ala	Arg	Pro	Ala	Gln	Arg	Asp
					85			90				95			

Pro	Leu	Ser	Ser	Pro	Pro	Ala	Gly	His	Thr	Val	Pro	Glu	Tyr	Arg	Asp
					100				105			110			

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Ala
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 210 215 220

Gly Glu Arg Glu Val Glu Asn Val Pro Lys Val Val Glu Pro Ala Ser
 225 230 235 240

Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Ala
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu
 275 280 285

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 290 295 300

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 305 310 315 320

Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 325 330 335

Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val
 340 345 350

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 355 360 365

Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly
 370 375 380

Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser
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Gly His Glu Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln
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 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144
 Ala Gly Ile Pro Gly Leu Leu Ser Leu Ala Pro Ala Ala Ala Ala
 35 40 45

cag ctt ggg att ggc qta tac caa gct gtg cgt qta cgc qta cgt acc 192
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

ttg ggt acc gtc cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240
 Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

ctt gca tct ttg ccg cgt gtg cct gcg cgc ccc gcg cag cgt gat 288
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

cct ctg tca tcc ccg ccg gca ggt cac,act gta ccg gaa tat cgc gat	336
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp	
100 105 110	
acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	432
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
130 135 140	
ggg gag cgt gag gtg gag ccg aag gta gtg gag ccg gcc tct	480
Gly Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
145 150 155 160	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	528
Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
165 170 175	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	576
Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val	
180 185 190	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu	
195 200 205	
gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca	672
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser	
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gct ccc aat cag ttt cgg aaa ccc tga	699
Ala Pro Asn Gln Phe Arg Lys Pro	
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Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala	
35 40 45	

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu
 195 200 205

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser
 210 215 220

Ala Pro Asn Gln Phe Arg Lys Pro
 225 230

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 <213> *Treponema pallidum*

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 <222> (1)...(939)
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<223> Subspecies: endemicum (Bosnia strain)

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agc aac tta gaa aag aat gcc aag gct cag gca gtg ytt att ggg cac			96
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His			
20 25 30			
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca			144
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala			
35 40 45			
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc			192
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr			
50 55 60			
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc			240
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser			
65 70 75 80			
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat			288
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp			
85 90 95			
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat			336
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp			
100 105 110			
acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag			384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu			
115 120 125			
gtg gag gac gtg ccg aag gta gtg gag ccg tct gag cgt gag gga			432
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly			
130 135 140			
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct			480
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser			
145 150 155 160			
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg			528
Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Val			
165 170 175			
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg			576
Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val			
180 185 190			
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag			624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu			
195 200 205			
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga			672
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly			
210 215 220			
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct			720

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
225 230 235 240	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	768
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
245 250 255	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	816
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val	
260 265 270	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	864
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu	
275 280 285	
gtc gct tct cag cat acg aag gag cca tcc cac tcg gtt tcc aac tca	912
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser	
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gct ccc aat cag ttt cggtt aaaa ccc tgg	939
Ala Pro Asn Gln Phe Arg Lys Pro	
305 310	
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Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala	
35 40 45	
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr	
50 55 60	
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser	
65 70 75 80	
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp	
85 90 95	
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp	
100 105 110	

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 225 230 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 275 280 285

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser
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Ala Pro Asn Gln Phe Arg Lys Pro
 305 310

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Arg Glu Gly Gly
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Val Glu Asp Ala
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Ala Gln Ala Val Val
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10

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Ala Ala Gln Leu Gly Ile Gly Val Tyr
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Asp Val Pro Lys Val
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Ser Gln His Thr Lys Gln Pro Ser His Ser
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Gly Gly Glu Arg
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Gly Gly Glu Arg
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Gly Gly Glu Arg
20

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Gly Gly Glu Arg
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<210> 19
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<221> misc_feature
<223> Subspecies: pallidum (Nichols strain)

atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile 1 5 10 15	48
agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His 20 25 30	96
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala 35 40 45	144
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr 50 55 60	192
ttg ggt acc gtc cgc ggt ggg tct caa aca agt cag gac gga ctg tcc Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser 65 70 75 80	240
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp 85 90 95	288
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp 100 105 110	336
acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu 115 120 125	384
gtg gag gac gcg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly 130 135 140	432
ggg gag cgt gag gtg gag gac gcg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser 145 150 155 160	480
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val 165 170 175	528
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala 180 185 190	576
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu 195 200 205	624
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	672

210	215	220	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct			720
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser			
225	230	235	240
gag cgt gag gga ggg gag cgt gag gtg gag gac gcg ccg aag gta gtg			768
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val			
245	250	255	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg			816
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala			
260	265	270	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag			864
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu			
275	280	285	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga			912
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly			
290	295	300	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct			960
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser			
305	310	315	320
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg			1008
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val			
325	330	335	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg			1056
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val			
340	345	350	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag			1104
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu			
355	360	365	
gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct ggg cat gaa gga			1152
Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly			
370	375	380	
ggg gag cgt gag gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct			1200
Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser			
385	390	395	400
ggg cat gaa gga ggg gag cgt gag gtc gct tct cag cat acg aag cag			1248
Gly His Glu Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln			
405	410	415	
cca tcc cac tcg gtt tcc aac tca gct ccc aat cag ttt cgg aac cct			1296
Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Asn Pro			
420	425	430	
gag ggg gaa ctc ccc ttt acg ctc cct gac cta tcc gag tca gaa att			1344
Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu Ser Glu Ser Glu Ile			
435	440	445	
gtg gtt ccg gag gaa cag aaa gga cgt gcg cat ccc cag gtg ata ccc			1392
Val Val Pro Glu Glu Gln Lys Gly Arg Ala His Pro Gln Val Ile Pro			
450	455	460	

gag ggt gcg cca cgt gga ctg caa cct ggt gaa tac tac gta cag att 1440
 Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu Tyr Tyr Val Gln Ile
 465 470 475 480

gca gtc ttt cat gac gct atc cag gtg cag agc att gtc cac cgt tac 1488
 Ala Val Phe His Asp Ala Ile Gln Val Gln Ser Ile Val His Arg Tyr
 485 490 495

ggg gta gaa tac ccc atc gca gtg gag cag gac atc cat gaa ggt aag 1536
 Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp Ile His Glu Gly Lys
 500 505 510

gtg cgt ttc acc gta tgc gtc ggt cct gtc caa aaa gac gaa cgc ggc 1584
 Val Arg Phe Thr Val Cys Val Gly Pro Val Gln Lys Asp Glu Arg Gly
 515 520 525

gcg gta cta gag aac ttc caa agg ttt gga ttc aag gac gac gcc ttt ctg 1632
 Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe Lys Asp Ala Phe Leu
 530 535 540

aaa aag gcg cga tga 1647
 Lys Lys Ala Arg
 545

<210> 20
 <211> 548
 <212> PRT
 <213> Treponema pallidum

<220>
 <221> misc_feature
 <223> Subspecies: pallidum (Nichols strain)

<400> 20

Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
 1 5 10 15

Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 275 280 285

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 290 295 300

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 305 310 315 320

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 325 330 335

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val

340

345

350

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 355 360 365

Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly
 370 375 380

Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser
 385 390 395 400

Gly His Glu Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln
 405 410 415

Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Asn Pro
 420 425 430

Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu Ser Glu Ser Glu Ile
 435 440 445

Val Val Pro Glu Glu Gln Lys Gly Arg Ala His Pro Gln Val Ile Pro
 450 455 460

Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu Tyr Tyr Val Gln Ile
 465 470 475 480

Ala Val Phe His Asp Ala Ile Gln Val Gln Ser Ile Val His Arg Tyr
 485 490 495

Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp Ile His Glu Gly Lys
 500 505 510

Val Arg Phe Thr Val Cys Val Gly Pro Val Gln Lys Asp Glu Arg Gly
 515 520 525

Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe Lys Asp Ala Phe Leu
 530 535 540

Lys Lys Ala Arg
 545

<210> 21
 <211> 1047
 <212> DNA
 <213> Treponema pallidum

<220>

<221> CDS
<222> (1)..(1047)
<223>

<220>
<221> misc_feature
<223> Subspecies: pertenue (CDC-2 strain)

<pre> <400> 21 atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile 1 5 10 15 </pre> <pre> agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His 20 25 30 </pre> <pre> gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala 35 40 45 </pre> <pre> cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr 50 55 60 </pre> <pre> ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc Leu Gly Thr Val Arg Gly Ser Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser 65 70 75 80 </pre> <pre> ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp 85 90 95 </pre> <pre> cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp 100 105 110 </pre> <pre> acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu 115 120 125 </pre> <pre> gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly 130 135 140 </pre> <pre> ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser 145 150 155 160 </pre> <pre> gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val 165 170 175 </pre> <pre> gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val 180 185 190 </pre> <pre> ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu </pre>	48 96 144 192 240 288 336 384 432 480 528 576 624
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195	200	205	
gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca			672
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser			
210	215	220	
gct ccc aat cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc			720
Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu			
225	230	235	240
cct gac cta tcc gag tca gaa att gtg gtt ccc gag gaa cag aac gga			768
Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly			
245	250	255	
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa			816
Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln			
260	265	270	
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag			864
Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln			
275	280	285	
gtg cag agc att gtc cac cgt tac ccc gag ggt gta gaa tac ccc atc gca gtg			912
Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val			
290	295	300	
gag cag gag atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt			960
Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly			
305	310	315	320
cct gtc caa aaa gac gaa cgc ggc qcg gta cta gag aac ttc caa agg			1008
Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg			
325	330	335	
ttt gga ttc aag gac gcc ttt ctg aaa aag gcg cga tga			1047
Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg			
340	345		
<210> 22			
<211> 348			
<212> PRT			
<213> <i>Treponema pallidum</i>			
<220>			
<221> misc_feature			
<223> Subspecies: pertenue (CDC-2 strain)			
<400> 22			
Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile			
1	5	10	15
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His			
20	25	30	
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala			
35	40	45	

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu
 195 200 205

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser
 210 215 220

Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu
 225 230 235 240

Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly
 245 250 255

Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln
 260 265 270

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln
 275 280 285

Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val
 290 295 300

Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly
 305 310 315 320

Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg
 325 330 335

Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg
 340 345

<210> 23
 <211> 1287
 <212> DNA
 <213> *Treponema pallidum*

<220>
 <221> CDS
 <222> (1)...(1287)
 <223>

<220>
 <221> misc_feature
 <223> Subspecies: *endemicum* (Bosnia strain)

<400> 23
 atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att 48
 Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
 1 5 10 15

agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct qca gca 144
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
 35 40 45

cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

ttg ggt acc gtg cgc ggt ggg tct caa aca aca aca aca aca aca aca 240
 Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	432
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
130 135 140	
ggg gag cgt gag gtg gag ccg aag gta gtg gag ccg gcc tct	480
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
145 150 155 160	
gag cgt gag gga ggg gag cgt gag gtg gag ccg aag gta gtg	528
Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
165 170 175	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag ccg	576
Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val	
180 185 190	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu	
195 200 205	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	672
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
210 215 220	
ggg gag cgt gag gtg gag ccg aag gta gtg gag ccg gcc tct	720
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
225 230 235 240	
gag cgt gag gga ggg gag cgt gag gtg gag ccg aag gta gtg	768
Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
245 250 255	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag ccg	816
Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val	
260 265 270	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	864
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu	
275 280 285	
gtc gct tct gag cat acg aag cag cca tcc cac tcc gtt tcc aac tca	912
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser	
290 295 300	
gct ccc aat cag ttt ccg aac cct gag ggg gaa ctc ccc ttt acg ctc	960
Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu	
305 310 315 320	
cct gac cta tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga	1008
Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly	
325 330 335	
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa	1056
Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln	
340 345 350	
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag	1104

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln
 355 360 365
 gtg cag agc att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtc 1152
 Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val
 370 375 380
 gag cag gac atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt 1200
 Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly
 385 390 395 400
 cct gtc caa aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg 1248
 Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg
 405 410 415
 ttt gga ttc aag gac gcc ttt ctg aaa aag gcg cga tga 1287
 Phe Gly Phe Asp Ala Phe Leu Lys Ala Arg
 420 425

<210> 24
 <211> 428
 <212> PRT
 <213> *Treponema pallidum*

<220>
 <221> misc_feature
 <223> Subspecies: *endemicum* (Bosnia strain)

<400> 24

Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
 1 5 10 15

Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
 180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
 210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
 225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
 245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
 260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
 275 280 285

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser
 290 295 300

Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu
 305 310 315 320

Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly
 325 330 335

Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln
 340 345 350

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln
 355 360 365

Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val
 370 375 380

Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly
 385 390 395 400

Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg
 405 410 415

Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg
 420 425

<210> 25
 <211> 1182
 <212> DNA
 <213> Treponema pallidum

<220>
 <221> CDS
 <222> (1)..(1182)
 <223>

<220>
 <221> misc_feature
 <223> Subspecies: pertenue (CDC-1 strain)

<400> 25
 atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att 48
 Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
 1 5 10 15

agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala
 35 40 45

cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240
 Leu Gly Thr Val Arg Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc	432
Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala	
130 135 140	
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta	480
Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val	
145 150 155 160	
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac	528
Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Val	
165 170 175	
gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt	576
Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Arg	
180 185 190	
gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag	624
Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu	
195 200 205	
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc	672
Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala	
210 215 220	
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta	720
Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val	
225 230 235 240	
gtg gag ccg tct gag cgt gag gga ggg gag cgt gag gtc gct tct	768
Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Ala Ser	
245 250 255	
cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca qct ccc aat	816
Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn	
260 265 270	
cag ttt ccg aac cct qag ggg gaa ctc ccc ttt acg ctc cct gac cta	864
Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu	
275 280 285	
tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga cgt gcc cat	912
Ser Glu Ser Glu Ile Val Val Pro Glu Glu Glu Gln Lys Gly Arg Ala His	
290 295 300	
ccc cag gtg ata ccc qag qgt qcgc cca cgt gga ctg caa cct qgt gaa	960
Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu	
305 310 315 320	
tac tac gta cag att gca gtc ttt cat gac gct atc cag gtg gag cag	1008
Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln Val Gln Ser	
325 330 335	
att gtc cac cgt cat ggg gta gaa tac ccc atc gca gtg gag cag gac	1056
Ile Val His Arg Tyr Gly Val Glu Pro Ile Ala Val Gln Gln Asp	
340 345 350	

atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt cct gtc caa
 Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly Pro Val Gln
 355 360 365

aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg ttt gga ttc
 Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe
 370 375 380

aag gac gcc ttt ctg aaa aag gcg cga tga
 Lys Asp Ala Phe Leu Lys Ala Arg
 385 390

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 <212> PRT
 <213> Treponema pallidum

<220>
 <221> misc_feature
 <223> Subspecies: pertenue (CDC-1 strain)

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Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
 20 25 30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
 115 120 125

Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala
 130 135 140

Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val

145

150

155

160

Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp
 165 170 175

Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg
 180 185 190

Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu
 195 200 205

Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala
 210 215 220

Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val
 225 230 235 240

Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Ala Ser
 245 250 255

Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn
 260 265 270

Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu
 275 280 285

Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly Arg Ala His
 290 295 300

Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu
 305 310 315 320

Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln Val Gln Ser
 325 330 335

Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp
 340 345 350

Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly Pro Val Gln
 355 360 365

Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe
 370 375 380

Lys Asp Ala Phe Leu Lys Ala Arg
 385 390